ABSTRACT

The addition of an alkali to aluminum sulfate raises the pH, increases that cationic charge, improves performance as compared to aluminum sulfate alone and causes the aluminum sulfate to be non-corrosive to skin and metal. The addition of a minor quantity of phosphoric acid also provides added stability to the product.

The advantages of this modified alum include improved floc performance over standard alum and other polyaluminum chloride (PACl) products. The product of the invention (by varying the percent of soda ash to alum) has the potential to compete with polyaluminum chloride products using alum-based products. The polyaluminum sulfate products of the invention do not decrease the pH of treated water, as much as alum and performs more like a PACl product. The polyaluminum sulfate (PAS), like the PACl works well in low alkalinity waters. The PAS products have been found to remove total organic carbon and lower turbidity very efficiently.